

CLAIMS

1. An adhesion promoter additive, comprising:
at least one unsaturated, amorphous polyester comprising
 - 5 1) an acid component comprising at least one α,β -unsaturated dicarboxylic acid compound, and
 - 2) an alcohol component;
wherein said alcohol component comprises at least 5% of a dicidol mixture of the isomeric compounds
 - 10 a) 3,8-bis(hydroxymethyl)tricyclo[5.2.1.0^{2,6}]decane,
 - b) 4,8-bis(hydroxy-methyl)tricyclo[5.2.1.0^{2,6}]decane, and
 - c) 5,8-bis-(hydroxymethyl)tricyclo[5.2.1.0^{2,6}]decane;
wherein each isomer is present in said dicidol mixture in a proportion of from 20 to 40% by weight; and
 - 15 wherein a sum of said isomeric compounds a) - c) is from 90 to 100% by weight based on said dicidol mixture.
2. The adhesion promoter additive as claimed in Claim 1, wherein said dicidol mixture further comprises up to 10% by weight of an additional isomer selected from the group consisting of isomers of dicidol, isomers of trimeric diols of a Diels-Alder reaction product of cyclopentadiene, isomers of higher diols of the Diels-Alder reaction product of cyclopentadiene and mixtures thereof.
3. The adhesion promoter additive as claimed in Claim 1, wherein said acid component further comprises a member selected from the group consisting of aromatic mono-carboxylic acids, aliphatic mono-carboxylic acids, cycloaliphatic mono-carboxylic acids, aromatic dicarboxylic acids, aliphatic dicarboxylic acids, cycloaliphatic dicarboxylic acids, aromatic polycarboxylic acids, aliphatic polycarboxylic acids, cycloaliphatic polycarboxylic acids and mixtures thereof.
- 30 4. The adhesion promoter additive as claimed in Claim 1, wherein said acid component comprises partly or entirely anhydrides, alkyl esters or mixtures thereof.

5. The adhesion promoter additive as claimed in Claim 1, wherein said alcohol component further comprises a member selected from the group consisting of linear diols, branched diols, aliphatic diols, cycloaliphatic diols, aromatic diols, 5 linear polyols, branched polyols, aliphatic polyols, cycloaliphatic polyols, aromatic polyols and mixtures thereof.

10 6. The adhesion promoter additive as claimed in Claim 1, wherein said α,β-unsaturated dicarboxylic acid compound is selected from the group consisting of citraconic acid, fumaric acid, itaconic acid, maleic acid, mesaconic acid and mixtures thereof.

15 7. The adhesion promoter additive as claimed in Claim 1, further comprising an additional acid compound selected from the group consisting of phthalic acid, isophthalic acid, terephthalic acid, 1,4-cyclohexanedicarboxylic acid, succinic acid, sebacic acid, methyltetrahydrophthalic acid, methylhexahydrophthalic acid, hexahydrophthalic acid, tetrahydrophthalic acid, dodecanedioic acid, adipic acid, azelaic acid, pyromellitic acid, trimellitic acid, isononanoic acid and 2-ethylhexanoic acid, phthalic acid anhydride, isophthalic 20 acid anhydride, terephthalic acid anhydride, 1,4-cyclohexanedicarboxylic acid anhydride, succinic acid anhydride, sebacic acid anhydride, methyltetrahydrophthalic acid anhydride, methylhexahydrophthalic acid anhydride, hexahydrophthalic acid anhydride, tetrahydrophthalic acid anhydride, dodecanedioic acid anhydride, adipic acid anhydride, azelaic acid anhydride, 25 pyromellitic acid anhydride, trimellitic acid anhydride, phthalic acid methyl ester, isophthalic acid methyl ester, terephthalic acid methyl ester, 1,4-cyclohexanedicarboxylic acid methyl ester, succinic acid methyl ester, sebacic acid methyl ester, methyltetrahydrophthalic acid methyl ester, methylhexahydrophthalic acid methyl ester, hexahydrophthalic acid methyl ester, tetrahydrophthalic acid methyl ester, dodecanedioic acid methyl ester, adipic acid methyl ester, azelaic acid methyl ester, pyromellitic acid methyl ester, trimellitic acid methyl ester, and 30 mixtures thereof.

8. The adhesion promoter additive as claimed in Claim 1, further comprising an additional alcohol compound selected from the group consisting of ethylene glycol, 1,2-propanediol, 1,3-propanediol, diethylene glycol, dipropylene glycol, triethylene glycol, tetraethylene glycol, 1,2-butanediol, 1,4-butanediol, 1,3-
5 butylethylpropanediol, 1,3-methylpropanediol, 1,5-pentanediol, cyclohexanedimethanol, glycerol, hexanediol, neopentyl glycol, trimethylolethane, trimethylolpropane, pentaerythritol, bisphenol A, bisphenol B, bisphenol C, bisphenol F, norbornylene glycol, 1,4-benzyldimethanol, 1,4-benzyldiethanol, 2,4-dimethyl-2-ethylhexane-1,3-diol and mixtures thereof.

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9. The adhesion promoter additive as claimed in Claim 2, wherein at least 20% by weight of said alcohol component comprises said dicidol mixture.

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10. The adhesion promoter additive as claimed in Claim 1, wherein at least 50% by weight of said alcohol component comprises said dicidol mixture.

11. The adhesion promoter additive as claimed in Claim 1, wherein at least 90% by weight of said alcohol component comprises said dicidol mixture.

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12. The adhesion promoter additive as claimed in Claim 1, wherein 100% by weight of said alcohol component comprises said dicidol mixture.

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13. The adhesion promoter additive as claimed in Claim 1, wherein said α,β-unsaturated dicarboxyclic acid compound is fumaric acid, maleic acid, maleic anhydride or mixtures thereof.

14. The adhesion promoter additive as claimed in Claim 1, wherein said acid component comprises adipic acid, phthalic acid, phthalic anhydride or mixtures thereof.

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15. The adhesion promoter additive as claimed in Claim 1, wherein a molar ratio of said alcohol component to said acid component is from 0.5:1 to 2.0:1.

16. The adhesion promoter additive as claimed in Claim 1, wherein a molar ratio of said alcohol component to said acid component is from 0.8:1 to 1.5:1.

5 17. The adhesion promoter additive as claimed in Claim 1, wherein wherein a molar ratio of said alcohol component to said acid component is from 1.0:1 to 1.1:1.

10 18. The adhesion promoter additive as claimed in Claim 1, which has an acid number of from 1 to 200 mg KOH/g.

19. The adhesion promoter additive as claimed in Claim 1, which has an OH number of from 1 to 200 mg KOH/g.

15 20. The adhesion promoter additive as claimed in Claim 1, further comprising assistants, additives or mixtures thereof

20 21. The adhesion promoter additive as claimed in Claim 20, wherein said assistants and additives are selected from the group consisting of inhibitors, water, organic solvents, neutralizing agents, surface-active substances, oxygen scavengers, radical scavengers, catalysts, light stabilizers, color brighteners, photosensitizers, thixotropic agents, antiskinning agents, defoamers, antistatic agents, thickening agents, thermoplastic additives, dyes, pigments, flame retardants, internal release agents, fillers, blowing agents and mixtures thereof.

25 22. The adhesion promoter additive as claimed in Claim 2, wherein said alcohol component comprises at least 90% of said dicidol mixture, and wherein fumaric acid, maleic acid maleic anhydride or mixtures thereof are present in a diol/acid ratio of from 0.9:1 to 1.1:1.

30 23. The adhesion promoter additive as claimed in Claim 1, wherein said acid component further comprises as additional acid adipic acid, phthalic acid phthalic anhydride and mixtures thereof in a ratio of α,β -unsaturated acid to additional acid of from 3:1 to 1:4.

24. A coating composition, comprising:

the adhesion promoter additive according to Claim 1; and
optionally water, an organic solvent or mixtures thereof.

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25. The coating composition as claimed in claim 24, which is selected from the group consisting of paints, varnishes, glazes, traffic markings, filling compounds, and pigment pastes.

10 26. The coating composition as claimed in claim 24, which is a primer, a surfacer, a basecoat, a topcoat, or a clearcoat.